

(No Model.)

2 Sheets—Sheet 1.

M. E. BEASLEY.
BARREL HOOP DRIVING MACHINE.

No. 245,050.

Patented Aug. 2, 1881.

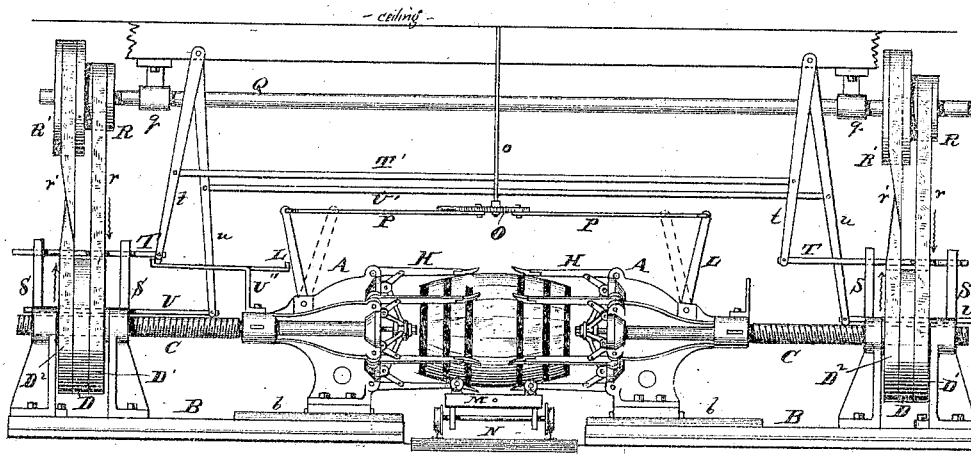
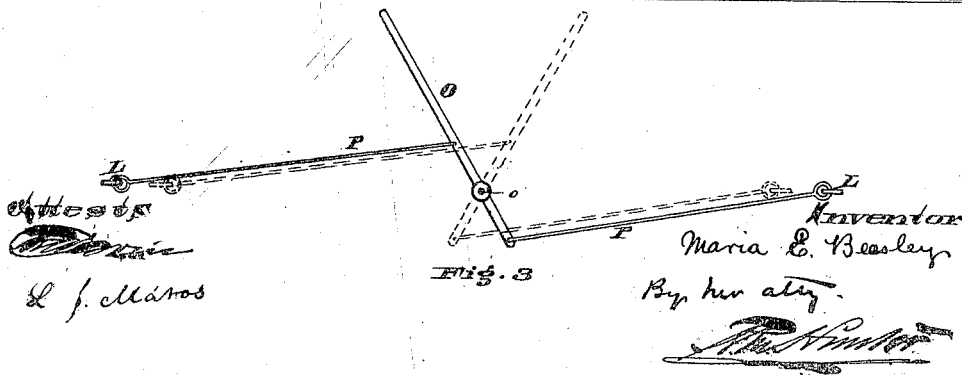
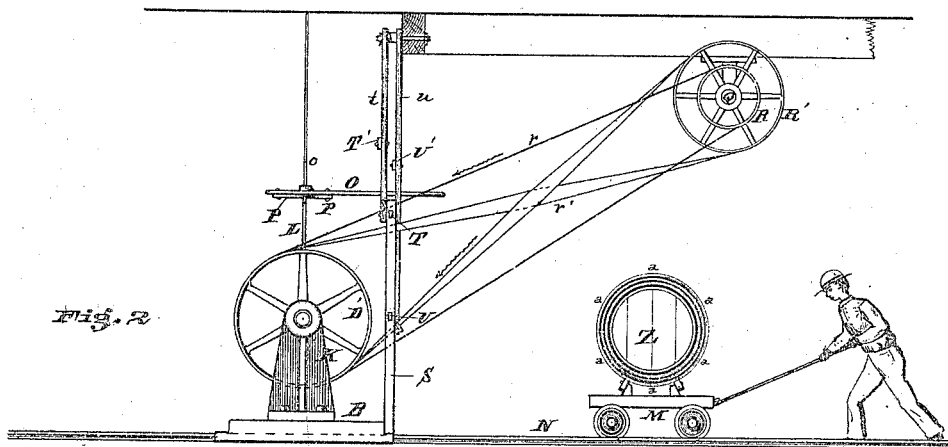


Fig. 1



(No Model.)

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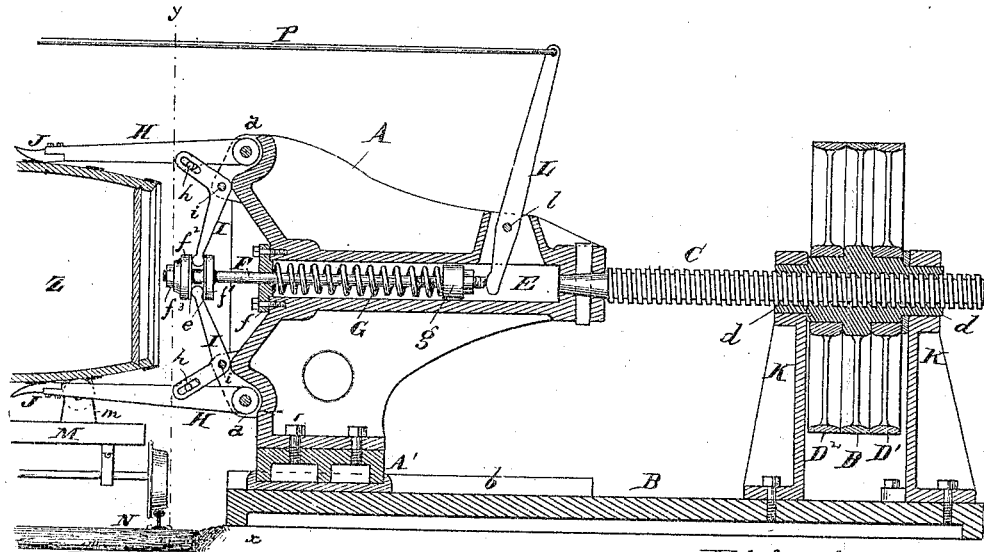


Fig. 4

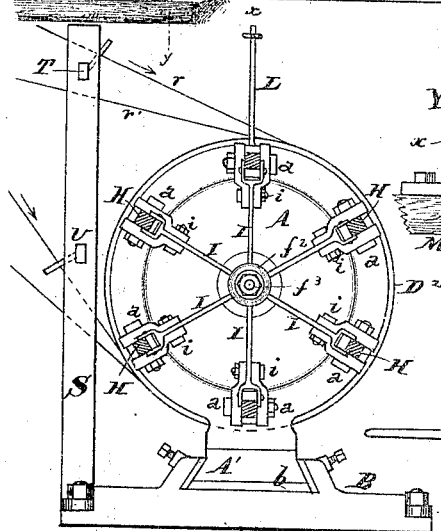


Fig. 5

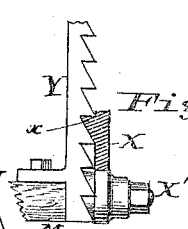


Fig. 7



Fig. 10

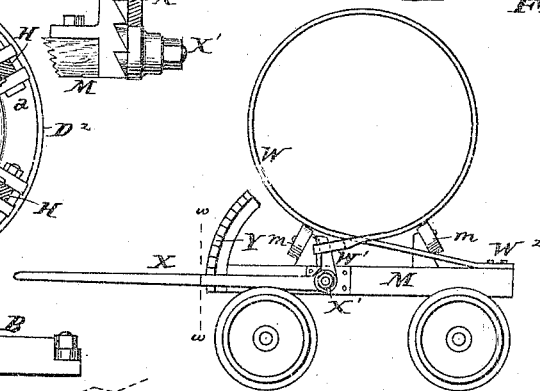


Fig. 6

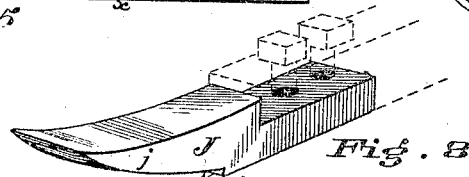


Fig. 8

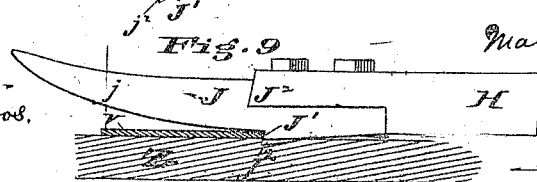


Fig. 9

Attests
L. J. Alford.

Inventor
Maria E. Beasley
By her ally

[Signature]

UNITED STATES PATENT OFFICE.

MARIA E. BEASLEY, OF PHILADELPHIA, PENNSYLVANIA.

BARREL-HOOP-DRIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 245,050, dated August 2, 1881.

Application filed July 10, 1880. (No model.)

To all whom it may concern:

Be it known that I, MARIA E. BEASLEY, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Machines for Forcing Iron Hoops on Barrels, of which the following is a specification.

My invention relates to that class of machines which are designed to force the iron hoops on barrels after the staves are in position and loosely hooped; and my invention consists in mechanism to force the iron hoops on the barrel from both sides simultaneously, in the manner hereinafter set forth, and which mechanism is fully set forth in the following specification, shown in the accompanying drawings, and referred to in the appended claims.

The object of my invention is to construct a machine to do what manual labor is now employed to do, and to save time and expense in this line of manufacture.

In the drawings, Figure 1 is a front elevation of the machine complete. Fig. 2 is a side elevation of same. Fig. 3 is a plan of levers to operate the hooping-arms. Fig. 4 is a sectional view of one-half of the machine on the line *xx* of Fig. 5. Fig. 5 is a cross-section of the machine on line *yy* of view shown in Fig. 4. Fig. 6 is an elevation of a barrel-compressing device attached to the truck. Fig. 7 is a cross-section of same on line *ww*, Fig. 6. Fig. 8 is a perspective view of the hooping-toe. Fig. 9 is an elevation of same. Fig. 10 is a sectional view of safety mechanism applied to the driving-screw.

The parts of the machine on both sides of the railroad *N* are exactly similar, except that the screws *CC* are right and left handed. Therefore when I describe one side I also describe the other.

A are reciprocating heads, which slide upon the guideways *b* on bed-plate *B* through the agency of the slides *A'*, attached to the heads. These heads *A* are keyed to screws *C*, which are reciprocated by band-wheels *D*, provided with hubs *d* working upon the screws *C* and supported in bearings *K*. Upon either side of the driving band-wheels *D*, and working upon their hubs, are idler-wheels *D'* and *D''*.

The heads *A* are provided with a series of hooping-arms, *H*, pivoted to the heads at *a*, and provided on their ends with hooping-toes

J, to be hereinafter described. Pivoted at *i* are a corresponding series of bell-crank levers, *I*, the outer ends of which operate on the arms *H* through the agency of a slot and pin, *h*, to throw them out or draw them in. The other ends of these levers *I* are held between two brass washers, *e*, in turn held by the hub *f'* on shaft *F* and nuts *f''* and *f'''*.

The shaft *F* is inclosed by a spring, *G*, one end of which rests against lock-nuts *g* on shaft *F*, and the whole is then placed in a hollow hub or hole, *E*, in the center of the heads, and the cap *f* is then placed in position and screwed over the opening *E*, which cap supports the other end of the spring. The action of the spring *G* and shaft *F* is to force the arms *H* upon the barrel *Z* and make them adjust themselves to uneven surfaces, and also to prevent the toes slipping over the hoops *V* in the forward movement.

Pivoted at *l* is a lever, *L*, the shorter arm of which rests against the end of the shaft *F* in the hole *E*, as shown in Fig. 4. These two levers *L*, one on each end of the machine, are connected to a lever, *O*, by bars *P* on opposite sides of the fulcrum and supporting-rod *o*, as shown in Fig. 3. By moving the lever *O*, the levers *L* are drawn in together or thrust apart.

The hooping-toe *J* is preferably composed of a step casting or forging of steel, and is provided with a curved end, *j*, as a guide, a slightly acute-angled edge, *j'*, to catch the hoop, and, if desired, a small knife-edge, *j''*, to act as a guide by cutting slightly into the wood. The step *J''* is more or less inclined, so as to fit more tightly to the arm *H* the greater the pressure.

The toe may be bolted or otherwise secured to the arm.

The truck *M* runs upon the track *N*, and is provided with wheel-supports *m*, upon which the barrel rests. Instead of these wheel-supports, a curved block or blocks may be used; but in any case the barrel is free to move and adjust itself to the arms *H*, which are located about and press upon it on all sides.

If desired, a clamping device for the staves near the end hoops can be applied to either side of the truck *M*, as shown in Fig. 6, in which *W* is a compressing steel band attached at one end, *W''*, to the truck, and having a loop in the other end at *W'*. Into this loop the small arm of the bell-crank lever *X*, pivoted

at X', is placed. To one side of the lever X, and bolted to the truck, is a rack, Y, into the teeth of which engages a tooth *x*, on the lever-arm X. To operate this device I proceed as follows: The band W is passed around the barrel near the ends or heads of same hoops, and the end W' is passed over the short arm of lever X. The lever is then pressed down until the staves are compressed and the end hoop can be more easily shoved on. The tooth *x*, engaging with the teeth of the rack Y, prevents the lever X returning until disengaged by a lateral movement. The driving-shaft Q is supported overhead in brackets *q*, and is supplied with two driving band-wheels, R R', of different diameters, on each end, and over the band-wheels D. The pulleys R drive the idler-pulleys D' by a band, *r*, in one direction, and the large pulleys R' drive the idlers D² in the opposite direction by the twist in the band *r'*. These bands *r* and *r'* are shifted to the driving-wheel D, respectively, by the bars T and U, provided with teeth, between which the bands move, which bars slide in standards S and are operated independently of each other by levers *t* and *u* and by bars T' and U'. The bands are so arranged that when one driving-wheel, D, is set in operation the other one is also operated. The movements are always started by the operator, but can be brought to rest automatically by the stop U'' acting upon the bars T and U to throw the band off the driving-pulley on to the idlers.

The operation is as follows: The heads A A being screwed back, the arms H are thrown out by lever O. A barrel, Z, being placed upon the truck M with its loose bands V on, it is run into position between the two heads A A, and the propelling-bands *r* are then shoved over upon the driving screw-pulleys D, causing the screws C to be forced toward barrel, carrying the heads with them. The said heads are then reciprocated simultaneously in opposite directions; then the lever O is disengaged, and the spring G, coming into play, draws the toes J and arms H down tightly against the barrel Z, and as the toes move toward the middle of the barrel they catch first the largest hoop and push it up tightly. Then the motion is reversed until the toes are back of the second hoop, when it is again reversed to force this hoop up, and so on to the end hoop, both sides of the barrel being hooped simultaneously. The lever O has not to be touched except at the starting of the operation on a new barrel, and then for the purpose of passing the two outer hoops, and to operate on the middle hoops first. As the toes J move back over a hoop the spring G gives way sufficient to allow the toes to pass without displacing it. When a barrel is hooped it is run off and another truck and barrel is run in place between the two heads. During the forcing up of the hoops the barrel are partly held by the arms H, and adjusts itself to them. A safety mechanism in the form of a spring, C², can be placed

between the head A and a collar on the screw C, the end C' of the same being free to slide in the hub of head A. This allows any undue strain to be taken up by the spring and not break the hoops.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the two reciprocating heads A, lever-arms H, pivoted to the peripheries of said heads, levers I, pivoted to the heads and operating the arms H, shafts F, situated within the heads and operating the levers I, and spring G to operate upon the above mechanism to keep the arms H down upon the barrel, substantially as and for the purpose specified.

2. A toe for a hooping-machine provided with guide end, *j*, acute-angled ledge J', and knife-edge *j'*, substantially as and for the purpose specified.

3. In a hooping-machine, the combination of two reciprocating heads, A, lever-arms H, pivoted to the peripheries of said heads, and provided with toes J to catch the hoops, levers I, pivoted to the heads and actuating the arms H, shaft F, situated within the heads and operating the levers I, spring G to operate the above mechanism to keep the arms H down upon the barrel, levers L, pivoted to the heads and operating the shafts F, lever O to operate the levers L, and bars P to connect the lever O with levers L, substantially as and for the purpose specified.

4. The reciprocating head A, provided with pivoted arms H, in combination with a driving-screw, C, arranged to slide in said head, band-wheel D, and a safety-spring, C², substantially as and for the purpose specified.

5. The combination of two oppositely-reciprocating heads, A, provided with pivoted arms H about their peripheries, levers I, shaft F, and spring G, or their equivalent, with a support for the barrel while being operated on, arranged between the heads A, and provided with clamping or compressing mechanism consisting of bell-crank lever X, provided with tooth *x*, rack Y, and band W, for the purpose of compressing the barrel at both of its ends, all constructed substantially as shown and described, and for the purpose specified.

6. The combination, with two reciprocating heads, A, provided with arms H, with screw C, band-wheels D D' D², driving-shaft Q, driving-wheels R R', bands *r r'*, bars T U, levers *t u*, bars T' U', levers L, and mechanism to cause the arms H to be pressed upon the barrel, rods P, and lever O, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

MARIA E. BEASLEY.

Witnesses:

ROBT. A. CAVIN,
R. M. HUNTER.